

CANCER SETIFERUS LINNAEUS, 1767 (CRUSTACEA, DECAPODA):  
PROPOSED VALIDATION OF NEOTYPE SELECTION UNDER THE  
PLENARY POWERS Z.N.(S.) 1617

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A controversy among carcinologists about the correct names of two of the economically most important shrimps of the world, threatens to start a most regrettable confusion in the nomenclature of these two species. The International Commission on Zoological Nomenclature is now asked to take steps to prevent this confusion.

Until 1936 the name *Penaeus setiferus* (Linnaeus, 1767) was given to a commercially extremely important shrimp, which was found in East American waters between New York and S. Brazil. In 1936 Burkenroad (*Annaes Acad. Brasil. Sci.* 7 (4) : 315-318) discovered that two species actually had been confused under the name *Penaeus setiferus*: a northern species inhabiting the coast of the U.S.A. and Mexico, and a southern species inhabiting the West Indian Islands (including Cuba and Jamaica) and the coast of S. America. Burkenroad retained the name *P. setiferus* for the northern species and gave the new name *P. schmitti* to the southern. He later (Burkenroad, 1939, *Bull. Bingham oceanogr. Coll.* 6 (6) : 17) confirmed this by selecting a specimen of the northern species from off Matanzas Inlet, Florida, to be the neotype for *Cancer setiferus* L., 1767.

In my opinion Burkenroad's action is perfectly correct, and most laudable, since the northern form was at that time the best known of the two, being the subject of a highly important fishery in the Gulf of Mexico and therefore it had been mentioned very often (under the name *P. setiferus*) in taxonomic and applied literature; apart from a few mentions in taxonomic literature the southern form had so far received very little attention. When after World War II the fishery for the southern form started to develop, it was always indicated by the name *Penaeus schmitti*.

Gunter (1962, *Gulf Research Rep.* 1 (3) : 107-114, 118-121; 1962, *Proc. Gulf Caribb. Fish. Inst.* 15 : 103-110) contested the correctness of Burkenroad's nomenclature: he believed that the name *P. setiferus* (L. 1767) should be given to the southern species and the name *P. fluviatilis* Say, 1817, to the northern, as in his opinion the type specimen of *Cancer setiferus* L. came from South America or the West Indies. Consequently Gunter thought Burkenroad's neotype selection to be in violation with the provisions of the Code. My own views, which oppose those of Gunter's have been given in a paper (1962, *Gulf Research Rep.* 1 (3) : 115-118), which thanks to Dr. Gunter's kindness was published simultaneously with his first two papers on the subject.

The crucial point in this question is whether or not Burkenroad's neotype designation is valid. In Burkenroad's (1939, *Bull. Bingham oceanogr. Coll.* 6 (6) : 17-25) paper all 6 conditions set by the Code for a neotype selection are fulfilled: (1) Burkenroad (1939) refers to his previous (1936) publication in which

he recognized *P. schmitti* as distinct from *P. setiferus* and where he listed the differences between the two; (2) of the designated neotype specimen the catalogue number is given so that recognition of the specimen is ensured; (3) the unsuccessful efforts to locate the type specimen are mentioned; (4) a discussion is given showing that the neotype, as far as Burkenroad was able to make out, belongs to the same species as the holotype; (5) the neotype locality "off Matanzas, Florida" lies within the type locality "America" so that the fifth requirement is also fulfilled; (6) the neotype is the property of the Bingham Oceanographic Collection of Peabody Museum of Natural History, Yale University, a recognized scientific institution.

It is point (5) which is contested by Gunter, who believes to be able to prove that the type of *Cancer setiferus* L., viz., the specimen described and figured by Seba (1761, *Locuplet. Rer. nat. Thes.* 3 : pl. 17 fig. 2) is the southern form. Seba's description and figure give not the least clue as to whether it is the southern or the northern species, both are rather poor and give not enough details to make such a distinction possible. The only locality given by Seba is "America," which does not help either. Gunter expressed the opinion that Seba's specimen more likely belongs to the southern species in view of the fact that Seba lived in Amsterdam, and the Dutch had at that time possessions in the West Indies and South America. I agree here with Gunter, but this is only a possibility and not a certainty, since Seba obtained material from sailors of ships that came to Amsterdam from all over the world; furthermore Seba had many correspondents including at least one in North America. The possibility that his specimen of "*Astacus fluviatilis*, *Americanus*" belongs to the northern form is therefore not precluded.

The fact that Linnaeus (1767) gave the locality of his species as "*Habitat in Indiis*" is not very important, as the type locality is the locality where the holotype is found (here Seba's "America") and not the locality mentioned in any subsequent paper, even if this paper contains the original description. Linnaeus' indication probably means "East and West Indies". At that time a large portion of the American continent was included in the term "West Indies" (so, in the "Compendium and Description of the West Indies", a translation of a 17th century manuscript by A. Vázquez de Espinosa, (1942, *Smithson. misc. Coll.* 102 : 108), St. Augustine, Florida is mentioned, a locality very close to the neotype locality of *Penaeus setiferus*).

The full published discussion of this case makes it clear that neither group has been able to convince the other of the correctness of its viewpoint, and as the question involves the switching of a name from one economically very important species to another, it seems urgent that an action by the Commission restores the stability and uniformity of the nomenclature of this group.

This action should be, in my opinion, the recognition of Burkenroad's neotype selection for *Cancer setiferus* L. As some zoologists deny the validity of Burkenroad's selection, it is perhaps best, in order to leave no room for doubt, to validate this selection under the plenary powers.

The generic name *Penaeus* Fabricius, 1798 and the family name Penaeidae Rafinesque, 1815, are already placed on the appropriate Official Lists (as no. 498 and no. 35 respectively), so that no action has to be taken regarding them.

The concrete proposals that I now place before the Commission are that they should:

- (a) use their plenary powers to validate the selection by Burkenroad (1939, *Bull. Bingham oceanogr. Coll.* 6 (6) : 17) of the ♂ specimen (carapace length 38 mm, total length 165 mm) numbered B.O.C. 237 (taken off Matanzas Inlet, Florida, on 2 April 1934, at 8–10 fathoms, with an ottertrawl, by Mr. M. B. Bishop) to be the neotype of *Cancer setiferus* Linnaeus, 1767;
- (b) place the following names on the Official List of Species Group Names in Zoology:
  - (i) *setiferus* Linnaeus, 1767 (*Syst. Nat.* (ed. 12) 1 : 1054), as published in the combination *Cancer setiferus*, and as identified through the neotype selection validated under (a) above;
  - (ii) *schmitti* Burkenroad, 1936 (*Annaes Acad. Brasil. Sci.*, 7 (4) : 315) as published in the combination *Penaeus schmitti*.

OBJECTIONS TO THE PROPOSED VALIDATION UNDER PLENARY POWERS OF A NEOTYPE FOR *CANCER SETIFERUS* L. 1767 (CRUSTACEA DECAPODA).

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When Linnaeus (1767) described *Cancer setiferus* he referred to a colored figure of Seba (Vol. III, 1761) labeled "*Astacus fluviatilis, Americanus*," which has been accepted as the type ever since. Linnaeus also gave the habitat as "*in Indiis*" and it has always been accepted as the American Indies until quite recently, because of the reference to "*Americanus*."

After all these remarks pertain to a warm water marine shrimp. *Americanus* could apply to polar seas or the Rocky Mountains or the South American Cordilleras. Thus Linnaeus' *in Indiis* is a perfectly natural and reasonable restriction, which is extremely important, and not unimportant as Holthuis would have it. Contentions to the contrary are unreasonable, and they are suspect on the grounds that they are for the purpose of manipulating the Code for ulterior motives to bring about desired ends, as indicated below.

Linnaeus' name *Cancer setiferus* has been accepted traditionally as the original designation for the southern Atlantic white shrimp, and no other interpretation is reasonable. The subsequent publications, following his (1767) notice, are strong evidence that Linnaeus' original intent was recognized and followed. Linnaeus (1790, J. F. Gmelin ed.) listed *Cancer setiferus* from South America and India; Olivier (1811, *Encyclopédie Méthodique. Hist. Nat. Insectes*, 8 : 1–722. Paris) listed it from South America. The following authors listed *Penaeus setiferus* from various localities in South America and the West Indies: H. Milne Edwards (1837, *Hist. Nat. Crustacés, etc.*, 2 : 1–532, atlas, 1–32, pls. 1–42), de Saussure (1858, *Mémoire sur divers crustacés nouveaux du Mexique et des Antilles, etc.* 1 (1). Geneve et Bale), Heller (1865, *Reise der österreichischen Fregatte "Novara" um die Erde, etc. Zoologischer Theil. Crustaceen. Penaeidae.* 2 (3) : 121–123), Bate (1881, *Ann. Mag. Nat. Hist.*, ser. 5, 8 : 169–196), Rathbun (1897, *Ann. Inst. Jamaica*, 1 : 1900; *Proc. Washington Acad. Sci.*, 2 : 133–156).

Say (1817, *Jour. Acad. Nat. Sci. Philadelphia* 1 (6) : 235–353) made the first published reference to a penaeid shrimp from North America when he described the northern species of white shrimp as *Penaeus fluviatilis*. His description was valid and the name has not lapsed. Either H. Milne Edwards (1837) did not know of Say's description or he ignored it and stated that *P. setiferus*, of which he had specimens